AUSTRALIA

Floral Emblems of Australia

Anne Boden

AUSTRALIAN NATIONAL BOTANIC GARDENS

Front cover photo: *Acacia pycnantha*, golden wattle
(Australian National Botanic Gardens)

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Australian Government Publishing Service
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Introduction

Plants are essential to the survival of the human race. As well as providing man with food and other necessities, plants are an inspiration for decoration in art and architecture and a basis for symbolism in literature, art, religion and society.

The use of plants in early Greek architecture is evident in the decorative form of conventionalised *Acanthus* leaves on the capitals of Corinthian columns. The sixteenth century marks the beginning of a form of painting in which flowers became the subject, rather than mere decorative or symbolic accessories in art. Explorations in the more remote areas of the world in the eighteenth and nineteenth centuries led to the introduction of many plant species new to European horticulture and provided the basis for a surge in botanical art, often in the form of accurate illustrations to accompany plant descriptions. In the nineteenth century a new approach to flower painting was made by the Impressionists, Renoir, Manet and Monet.

The association of certain plants with folklore and religion is based on the cycle of birth, growth, death and decay common to all living things. Thus the scattering over the newly married of flowers and grain, or the modern substitute, confetti, symbolises the fertility of nature. In Christian symbolism, ivy, an evergreen plant, represents everlasting life. The use of holly and palm as seasonal decorations in Christian churches is derived from the Roman tradition of using these plants as symbols of triumph.

Suspicious people have long regarded certain plants as the dwelling places of spirits capable of influencing the lives of people nearby. Sprigs of hawthorn used to be placed on the cradle of a newborn baby in ancient Rome as a charm against sorcery. In remote areas of Scotland there are surviving tutelary rowans, originally planted near cottages in the belief that the tree would protect the residents from evil spirits.

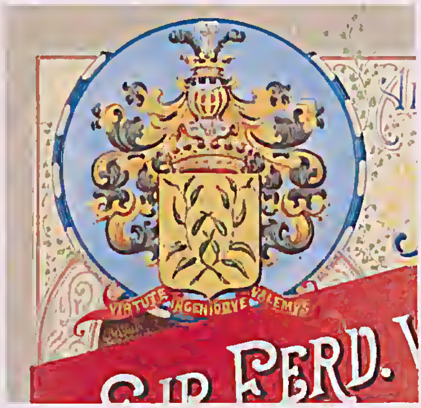
Acanthus leaves on the capital of a Corinthian column.

Ivy

Holly

Hawthorn

Flowers, fruits and trees are represented on many heraldic insignia. The oak is the tree most commonly used on British armorial bearings but other trees used in heraldry include apple, pine, palm, olive, laurel and willow. In some cases the choice is a punning reference to the name of the bearer, as in the use of a grove of trees by the family, Forrest. Baron Ferdinand von Mueller, the German botanist who spent more than fifty years collecting and describing Australian plants, was granted arms depicting two branches of *Eucalyptus* leaves, arranged side by side with the lower ends entwined. Flowers used on armorial bearings include familiar examples such as rose, thistle and iris (often in the form of fleur-de-lis), in addition to sunflower, daisy, cotton, tobacco, violet and hyacinth. The arms of the family Fraser usually bear six silver strawberry flowers, recorded in heraldic terms as *fraises argent,* illustrating the French derivation of much of the language of British heraldry. The range of fruits is even more diverse, and apart from apples, oranges, grapes and strawberries which are featured on many bearings, cabbage, carrot, maize, celery and lettuce are also used.



National Herbarium of Victoria

The arms granted to Baron Ferdinand von Mueller.

The rose, now regarded as the national flower of England, appears to have been first used as a badge by Edward I, who either inherited it from his mother, Eleanor of Provence, or assumed it to commemorate his descent from her. According to tradition the Rose of Provence was introduced by returning crusaders. The Tudor Rose, the Royal device, is a double flower with white and red petals for the houses of York and Lancaster respectively, symbolising their consolidation by the marriage of Henry VII to Elizabeth of York in 1486. The armorial bearings of many nations include plants of emblematic or economic importance, and where the national flag features the armorial bearings, such floral detail is included on the flag. The Canadian flag depicts a stylised leaf of red maple, coloured red against a white background, surely one of the most distinctive and easily identified flags. The Lebanese flag features the national emblem, cedar of Lebanon, a stately tree which was formerly abundant but is now reduced to scattered remnants by over-exploitation and depredation by browsing goats. In the Old Testament the cedar of Lebanon is described as 'excellent above all trees of the field' and it symbolises power, prosperity and a long life. Cyprus has chosen twin olive branches under a map of the country, symbolising hopes for peace between the opposing Greek and Turkish factions.

The United States of America lacks a national floral emblem. Despite various proposals it has proved difficult to find a single species which adequately represents such a geographically diverse country. However over the last eighty years all the states and the District of Columbia have adopted floral emblems. When the World Fair was held in Chicago in 1893, women's groups in several western states proposed to their legislatures that a floral emblem be chosen to be displayed with each state exhibit. Oklahoma, then a territory, chose a mistletoe, *Phoradendron serotinum,* so beginning the series of proclamations of state and territorial flowers which ended in 1968 when Rhode Island proclaimed a violet, *Viola palmata* as its floral emblem. About three-quarters of the states chose a local native species but in several cases only the genus is named. Most of the states which have proclaimed an exotic species as state flower have chosen popular garden plants, but choices such as peach blossom (Delaware), clover (Vermont) and orange blossom (Florida) honour the value of these plants to the economy of the represented state. Louisiana and Mississippi share *Magnolia grandiflora,* an indigenous evergreen tree with large fragrant white flowers. The pink flowered native shrub, *Kalmia latifolia,* commonly known as mountain laurel, is the floral emblem of Connecticut and Pennsylvania.

The maple leaf is Canada's national emblem. In a naturalistic form it is included in the national armorial bearings and it is also used on the flag and the current 1 cent coin. Each Canadian province has a proclaimed floral emblem. The only province whose floral emblem is an exotic species is Quebec, where madonna lily, *Lilium candidum,* was chosen. Nova Scotia and the American state of Massachusetts share *Epigea repens,* known locally as mayflower.

New Zealand's adoption of the silver fern, *Cyathea dealbata* as a national emblem originates in the emblematic use of fronds of this species by the New Zealand Native Rugby Team which toured England in 1888. Silver fern, also known by the Maori name, *ponga,* is included on the armorial bearings of New Zealand, military badges, insignia of national sporting teams and the current 1 cent coin.

Like other countries with a colonial history, Australia adopted new and distinctive emblems symbolising the national identity gained with Federation in 1901. The kangaroo and emu, chosen as supporters of the shield in the Australian armorial bearings, are included in the blazon, the description made in heraldic terms. There is no mention made in the blazon of the ornamentation of wattle included in the coloured illustration accompanying the gazettal of the bearings on 18 January 1913. Golden wattle, *Acacia pycnantha,* although popularly regarded as the Australian national flower, has not been proclaimed. No doubt many Australians would appreciate correction of this anomaly by 1988, when two centuries of European settlement in this country will be celebrated.

United States Postal Service

Oklahoma stamp illustrating mistletoe, the state floral emblem.

Government of Canada

Stylised red maple leaf on Canadian flag.

The cedar of Lebanon

In the latter part of the nineteenth century Australians started to turn more to their immediate surroundings for inspiration in art and craft. Designs incorporating native plants were used to decorate household items such as china, furniture, plaster mouldings and ceramic tiles. Advertisements and trademarks for locally manufactured goods featured native wildflowers, including flannel flower (*Actinotus*), Christmas bells (*Blandfordia*), waratah (*Telopea*) and various species of *Acacia* and *Eucalyptus*.

In New South Wales a strong popular feeling for the waratah developed and its evolution as a floral emblem appears to have been spontaneous and its acceptance unanimous. In Western Australia, where geographical separation from the more populous eastern part of the country encouraged loyalty to a regional ethos, kangaroo paw, as a genus endemic in the State, was an obvious symbol. South Australians attracted by the brilliance of Sturt's desert pea readily adopted it as a symbol. In these States popular acceptance of the floral emblem was later formalised by proclamation and now there is widespread use of the emblem by government departments, official agencies and community groups.

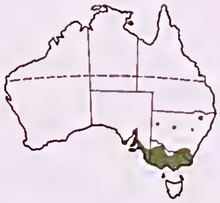
The Northern Territory's selection and promotion of emblems is exemplary. Sturt's desert rose, the red kangaroo and wedge-tailed eagle were chosen as suitable emblems, and ochre, black and white as appropriate official colours. The armorial bearings of the Northern Territory, mainly in the official colours, include the faunal and floral emblems. The official colours are also used in the flag which features a stylised version of the floral emblem. Both the armorial bearings and the stylised form of the floral emblem are widely used for official purposes and readily identified as symbols of the Northern Territory.

In Queensland, Tasmania, Victoria and the Australian Capital Territory the floral emblems were the subject of deliberate choice, involving interested citizens, organisations and governments. It is not enough merely to choose and proclaim an emblem, there must be official encouragement for its use in government insignia and the badges of community groups. General use of the floral emblem is unlikely without the example of its prominent use and enthusiastic promotion by government departments and other authorities.

As well as being symbols used in natural and stylised forms in various media, Australia's floral emblems are elements of the national living heritage. The collection and naming of the species form part of the early botanical history of the country. These emblematic species do not grow naturally in isolation from other species but are components of ecosystems. As well as admiring and conserving them in their natural habitats in national parks and other conservation areas, it is possible to cultivate them in gardens and parks. A greater understanding of Australia's floral emblems may lead to a heightened awareness of the need to conserve and cultivate these species and encourage their emblematic use.

Australia

Acacia pycnantha, golden wattle



Joseph Banks (1743–1820), English naturalist and patron of science on Captain James Cook's *Endeavour* voyage, 1768–70, detected in the flora of New South Wales an apparent absence of plant foods acceptable to European taste. In 1786 Captain Arthur Phillip was appointed Governor of New South Wales, and Banks advised him of the need to take seeds and plants to provide grain, fruit and vegetables for the penal colony. To supply food Phillip took wheat and corn from England. He called at Rio de Janiero and obtained:

> Coffee, both seed and plant; Cocoa in the nut; Cotton seed; Banana-plant; Oranges, various sorts both seed and plant; Tamarind; Prickly pear, plant with cochineal on it; ... Ipecacuanha — three sorts; Jalap.

At the Cape of Good Hope he acquired quince, apple, pear, strawberry, fig, bamboo, sugar, oak and myrtle plants. Oak and myrtle, the earliest decorative plants introduced to the new colony, mark the beginning of a veritable flood of exotic species as settlers sought to assuage their homesickness with the familiar plants of English horticulture.

Bank's recognition of the rich and unfamiliar nature of the Australian flora stimulated lively curiosity in European botanists and plant collectors, and numerous dried specimens, seeds and plants were sent from the colony to herbaria and horticultural enthusiasts in Europe. Notable botanists, mainly British, German and French, visited Australia to collect specimens of plants mostly new to science.

Australian National Botanic Gardens

Australian Information Service

Golden wattle occurs in the understorey of open forest or woodland and in open scrub and farmland in south-eastern Australia.

For most of the nineteenth century few settlers in Australia displayed any interest in the local flora, either intrinsically or horticulturally, preferring gardens of exotic plants. Larger landholders exploited the unusual effects of native plants like Norfolk Island pine and bunya pine, but invariably these were established in grand gardens of predominantly exotic species.

In the spirit of national and patriotic fervour generated by the approach of Federation, achieved in 1901, public interest in the Australian environment was awakened and the search for a national identity brought the desire for national symbols.

Archibald Campbell founded a Wattle Club in Victoria in 1899 to promote a Wattle Day demonstration every September to encourage recognition of the flower as a symbol of patriotism. In 1908 he delivered a lecture entitled 'Wattle Time; or Yellow-haired September' in which he stated that 'by numbers, the Wattle is almost exclusively Australian, and should undoubtedly be our National Flower'. Interest in a national Wattle Day was revived in Sydney in 1909. Victoria and South Australia participated in 1910, and Queensland in 1912.

At the same time R. T. Baker, botanist and museum curator, advocated the choice of waratah, *Telopea speciosissima* as the Australian national flower. He wrote:

> The expression 'the land of the Waratah', applies to Australia and no other; it is Australia's very own.
>
> In the Wattle, Australia has not a monopoly like the Waratah, for Africa has over one hundred native wattles, and it also occurs in America, East and West Indies and the Islands.
>
> Then again it is not too much to say that throughout the whole botanical world the Waratah is probably unsurpassed as a flower for decorative purposes, and it is impossible to so conventionalise it out of recognition — a great feature in a national flower.

In 1911 the *Evening News* in South Australia reported indignant local reaction to a report 'that South Africa has commandeered the yellow flower (wattle), and proposes to use it for patriotic purposes' and supported the choice of waratah as the Australian national flower, noting its tangible features of strength, beauty and colour and its symbolic qualities of health, firmness, endurance and independence.

The adoption of wattle as the national flower tends to be confirmed by its introduction into the design of the Australian armorial bearings on the recommendation of the Rt Hon. Andrew Fisher, Prime Minister of Australia, when the Commonwealth Armorial Ensigns and Supporters were granted by Royal Warrant on 19 September 1912.

The conflict which existed about the choice of the Australian national flower is seen in the inclusion of both waratah and wattle flowers as decoration on the three golden trowels used by the Governor-General, Lord Denman, the Prime Minister, the Rt Hon. Andrew Fisher and the Minister for Home Affairs, the Hon. King O'Malley, for the laying of foundation stones of the commencement column in Canberra, the national capital, on 12 March 1913.

Acacia pycnantha Benth. enjoys popular acceptance as Australia's national flower but it has not been proclaimed as the national floral emblem.

It was collected in 1836 in the interior of New South Wales by the Surveyor-General of New South Wales, Thomas Mitchell, who led two exploratory expeditions to the Darling and Murray River systems. The British botanist, George Bentham (1800–1884) described the species in 1842. Bentham wrote *Flora Australiensis,* still a standard reference text on Australian plants. Publication of a new work, *Flora of Australia,* commenced in 1981.

The generic name *Acacia* is derived from the Greek *akis,* a point, referring to the prickly leaves of some species. The specific name *pycnantha* from the Greek *pyknos,* dense, and *anthos*, a flower, refers to the dense clusters of flowers. There are more than 700 species of *Acacia* in Australia, making it the largest genus in the Australian flora. The vernacular name, wattle, used for Australian species of *Acacia,* derives from Anglo-Saxon times. Wattles were long flexible twigs interwoven for the framework on which mud was daubed. This rural British building technique was introduced by early settlers, and an abundant local tree, *Callicoma serratifolia* (family Cunoniaceae), commonly and perhaps confusingly known as black wattle was first used this way at Port Jackson. Species of *Acacia* were later used as wattles in Australia.

Acacia is the largest genus in the family Mimosaceae, the Mimosa family, which is mainly tropical and sub-tropical in distribution.

A. pycnantha, golden wattle, is a shrub or small tree about 4 to 8 metres tall. After the seedling stage, true leaves are absent, their function being performed by phyllodes which are modified flattened leaf stalks lacking leaf blades. The leathery phyllodes are 6 to 20 cm long, broadly lance or sickle-shaped and bright green in colour. In spring large fluffy golden-yellow flowerheads with up to eighty minute sweetly scented flowers provide a vivid contrast with the foliage. The dark brown mature fruit, 7 to 12 cm long, splits along one side to release the seeds.

Golden wattle occurs in the understorey of open forest or woodland and in open scrub formations in South Australia, Victoria, New South Wales and the Australian Capital Territory, in temperate regions with mean annual rainfall of 350 mm to 1000 mm. It regenerates freely after fires, which usually kill the parent plants but stimulate the germination of seeds stored in the soil if rain follows soon after. Regeneration may produce dense thickets in forests and woodlands and along roadsides.

The brilliant yellow, fragrant flowers of golden wattle make it a popular garden plant. It is moderately frost tolerant and grows well in a wide range of soils provided drainage is effective, but tends to be short-lived in cultivation. It is easily propagated from seed soaked in hot water to break the hard seed coat, and the seedlings can be transplanted to pots of soil mix for growing on before planting out in a lightly shaded or open position.

Golden wattle is grown abroad in temperate regions for its bark which has a higher content of tannin than other species of *Acacia* cultivated for tanbark, although its relatively small size reduces the overall yield. Golden wattle flowers have been used in perfume making. It was introduced to horticulture in the northern hemisphere about the middle of the nineteenth century. In Britain it survives outdoors only in the mildest areas. In California it has escaped from garden cultivation and now grows wild but it is not considered a pest.

The first granting of armorial bearings to the Commonwealth of Australia was made in 1908. A new design was granted by Royal Warrant on 19 September 1912. The branches of wattle used as an ornamental accessory to the shield, representing the badges of the six States as they were in 1912, were not mentioned in the blazon, but were depicted in the coloured illustration included in the gazettal of the Australian armorial bearings. There are conventional versions of the bearings for formal printing and other formal media. Stylised versions are also used. The wattle depicted has clusters of spherical flowerheads coloured yellow and blue-grey, and green phyllodes characteristic of many species of *Acacia*. It is not a botanically accurate representation of *A. pycnantha*.

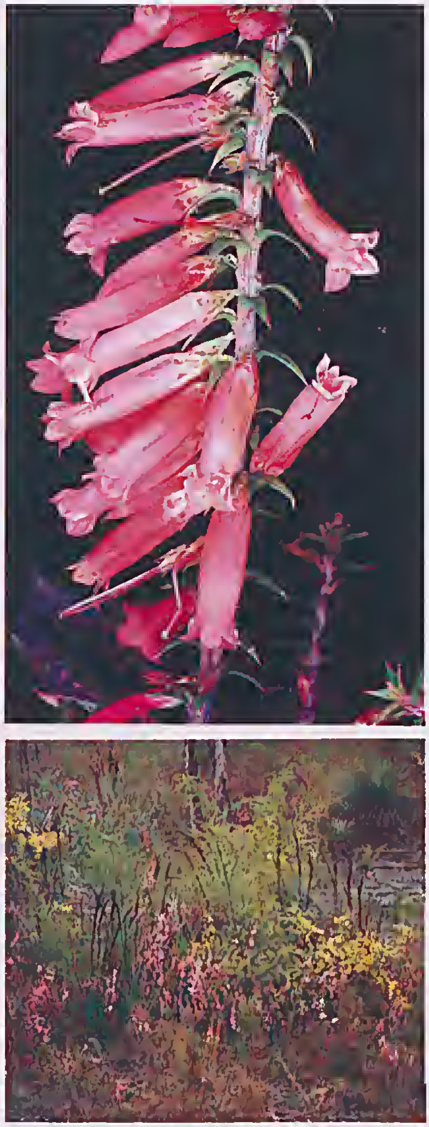
The Order of Australia is part of the Australian system of honours and awards established by the Queen on 14 February 1975 to recognise achievement or meritorious service. The designs of the insignia of the Order are based on an individual ball of wattle flowers. The insignia are convex golden discs adorned with beads and radiating lines, and surmounted by an enamelled crown, signifying the role of the Queen as Sovereign Head of the Order. Blue ribbons decorated with golden wattle motifs complete the insignia in which the colours that predominate, blue and gold, represent the sea which surrounds Australia and the colour of the popularly accepted national flower. The blue and gold wreath surmounting the shield in the armorial bearings of Australia is described in the blazon, 'for the Crest On a Wreath Or and Azure. . .'

Australians representing their country in international sporting events usually wear the national colours, green and gold, said to be based on wattle foliage and flowers.

The first Australian stamp to include wattle was a penny red stamp, issued in December 1913 and featuring a portrait of King George V. A similar design was used for four values of subsequent issues of stamps and another five values were added later. This wattle was not *A. pycnantha* but probably *A. mearnsii* or *A. decurrens*. Wattle was incorporated as part of the design of numerous other Australian stamps. The Royal visit of 1963 was commemorated by the issue of two stamps. One included flowers of wattle and rose, beneath portraits of the Queen and the Duke of Edinburgh. In 1959–60 a set of stamps was issued featuring Australian native flowers designed by Margaret Stones, an Australian botanical artist on the staff at the Royal Botanic Gardens, Kew. The 2 shilling stamp depicted a broad-leafed wattle with the caption, Wattle. Golden wattle was featured on a 5 cent stamp issued on 17 April 1970 which complements the earlier set decorated with the floral emblems of the six Australian States.

Victoria

Epacris impressa, common heath



Australian National Botanic Gardens

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Common heath occurs in coastal heathlands as well as in montane and sub-alpine areas of south-eastern Australia.

Representatives of interested Victorian government departments, societies and individuals met on 18 September 1951 and unanimously agreed on common heath as the State floral emblem. The pink form of common heath, *Epacris impressa,* Labill. was proclaimed the floral emblem of Victoria on 11 November 1958. Victoria was the first Australian State to give official recognition to such an emblem.

Common heath was collected in Tasmania in 1793 by the French botanist, Jacques-Julien Houton de Labillardière during his voyage with Bruny D'Entrecasteaux on the unsuccessful search for the missing explorer, La Pérouse. Following Bruny's death in July 1793, royalist officers of *La Recherche* and *L'Espérance*, handed the ships to the Dutch in Java, where Labillardière, a republican, was imprisoned from October 1793 to March 1795. When he returned to France he found that his plant collection of more than 4000 specimens had been sent to England as a prize of war. Through the diplomacy of Sir Joseph Banks the specimens were eventually returned to their collector. *E. impressa* was described by Labillardière in 1805.

The generic name *Epacris* is derived from the Greek *epi,* upon, and *akris,* a hill, referring to the elevated habitat of some species. The specific name *impressa*, Latin for impressed or indented, refers to five dimples on the outside of the basal part of the floral tube. *Epacris* contains about forty species of evergreen shrubs which occur mainly in temperate eastern Australia and to a minor extent in New Zealand. The family Epacridaceae, the Australian heath family, is distributed mainly in Australia and New Zealand. It is closely related to the Ericaceae, the much larger heather and azalea family which has a greater occurrence in the Northern Hemisphere.

Common heath is a slender, upright shrub which grows to about a metre in height. The rigid, alternate leaves are stalkless and fairly narrow. They range from 4 to 16 mm in length and are sharply pointed. The tubular flowers up to 25 mm long are arranged singly in the leaf axils and are often so densely packed around the stem that the cluster of flowers assumes a cylindrical brushlike appearance. On other specimens flowers may be sparse and arranged on only one side of the stem. Flowering occurs from late autumn to late spring, reaching a peak in winter. The fruit is a capsule which splits to release minute seeds. Common heath has many colour forms including pure white, pale pink, rose pink, crimson, scarlet and rare double flowered forms, but the pink form is the one chosen and proclaimed as Victoria's floral emblem. The Grampians heath, *Epacris impressa* var. *grandiflora,* which has wider rosy-crimson flowers and coarser downy greyish foliage, is confined to the Grampian Mountains of western Victoria.

Common heath occurs in coastal heathlands as well as in montane and sub-alpine areas. It is distributed from Clyde River, New South Wales to the Mt Lofty Ranges in South Australia. In Victoria it occurs in coastal regions and adjoining foothills, the Grampians and the Little Desert. It is also common in Tasmania.

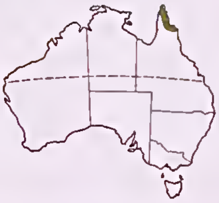
It is a beautiful shrub worthy of cultivation. It may be propagated from seed which is reported to need storage in cool, dry conditions for 12 to 16 weeks after harvesting and prior to sowing. Seed is sown on the surface of soil in pots and must be kept constantly moist. Germination of seeds and initial growth of seedlings are slow. Transplanting requires care in order to avoid damage to the fine roots. Seeds collected from populations of uniform colour come true but variations in flower colour are noted in the progeny of non-uniform populations. Vegetative propagation of desirable forms is carried out using stem cuttings 7 to 8 cm long, taken below the soft tips in late autumn. Successful results are reported using a medium of fine gravel and peat over a base of milled sphagnum moss. A good root system forms in 9 to 10 months without bottom heating. Rooted cuttings and young plants need gentle handling at all stages to avoid root damage. Common heath is ideally suited for cool, moist areas in well drained, acidic soils. As individual plants tend to be short-lived, a sequence of plantings is recommended to ensure the retention of this beautiful species in the garden. Pruning overcomes its natural straggly habit and may be used to supply cut flowers for indoor decoration, for which they are attractive and last quite well.

It was introduced to English horticulture in 1825 but proved frost tender outdoors. As it flowers at Christmas in the Northern Hemisphere and is suitable for cultivation in cool greenhouses, it is a useful seasonal species for the indoor plant trade. Forms bearing larger flowers in selected colours have been given cultivar names overseas.

Common heath is depicted in the armorial ensign granted to Victoria on 28 March 1973 and recorded in the College of Arms, London. The current armorial ensign includes additions made to the earlier one, granted on 6 June 1910, from which the floral emblem is absent. The more recent blazon, the description of the bearings in heraldic terms, states: 'upon a Compartment of Grass springing therefrom ... a representation of the Floral Emblem for the said State of Victoria that is to say the Pink Form of the Common Heath, Epacris impressa Labill'.

Common heath was featured on the 13 cent stamp of the State floral emblem set issued on 10 July 1968. R. and P. Warner designed the stamp.

Queensland

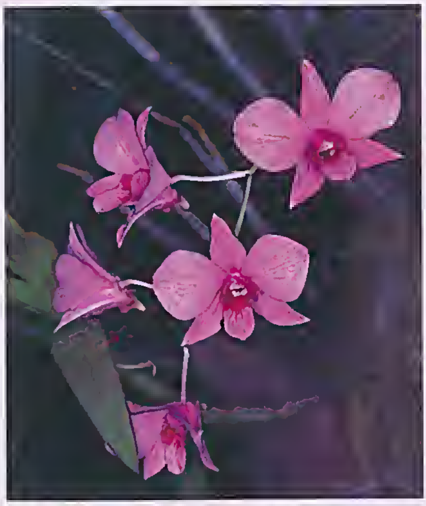


Dendrobium bigibbum, Cooktown orchid

When Queensland prepared for its Centenary in 1959, it sought advice on native species suitable as a floral emblem. The species suggested were *Dendrobium bigibbum* (Cooktown orchid) *Grevillea banksii* (red silky oak), *Brassaia* (now *Schefflera*) *actinophylla* (umbrella tree), and *Stenocarpus sinuatus* (wheel of fire). A Brisbane newspaper, the *Courier-Mail,* sought additional suggestions from its readers and finally compiled a list of thirteen species. In a public poll for the most popular choice as floral emblem, 10 917 entries were submitted and according to the organiser 'the Cooktown Orchid, Queensland's own world-famous hybrid [*sic*] orchid came out thousands ahead in the count of votes'. *Grevillea banksii* was second, and third was *Euphorbia pulcherrima,* poinsettia, a Mexican species already used as the floral emblem of the capital city, Brisbane. On 19 November 1959 the Cooktown orchid *Dendrobium bigibbum* Lindl. was proclaimed as the floral emblem of Queensland. It conformed with the Government's criteria in being an easily cultivated native species confined to Queensland, decorative and distinctive in appearance, and coloured close to the State colour, maroon.

Cooktown orchid plants were first collected by a Dr Thomson on Mount Adolphus, a small island about 18 km north-east of Cape York. These plants were sent to a nursery in London, and in 1852 the species was described and named by the British botanist, John Lindley (1799–1865), a colleague of Sir Joseph Banks.

The generic name *Dendrobium* is derived from the Greek *dendron,* tree, and *bios,* life; plants of many species of this genus perch on tree trunks and branches. The specific name *bigibbum* is Latin for double-humped,



M. Fagg

Australian National Botanic Gardens

Cooktown orchid occurs in Queensland, northwards from near Cairns.

referring to the double spur on the flowers, a very unusual characteristic in the genus and first noted in this species. *Dendrobium* is a very large genus of about 1400 species in south and east Asia and in the south-west Pacific. *Dendrobium* belongs to the orchid family, the largest family of flowering plants. This family is distributed widely throughout the world, with the greatest number in tropical areas.

The common name, Cooktown orchid, refers to the northern Queensland town, Cooktown, which lies within the distribution of the species on the Endeavour River, named by Captain Cook after his ship was repaired there in 1770.

Cooktown orchid flowers range in colour from white to various shades of mauve. Variation from 8 to 80 cm in height and up to 1.5 cm in diameter exist in the size of the pseudobulbs, the swollen bulb-like portions of the stems. The leaves are lance-shaped, 5 to 12 cm long and arranged on the upper parts of the pseudobulbs. The flowering stems, 10 to 40 cm long, carry up to 20 stalked flowers about 3 to 7 cm wide which are usually coloured deep lilac, but may be white, pale lilac to deep reddish-lilac and occasionally purple-lilac with a white border. It usually flowers in autumn and winter but may flower throughout the year in the north.

It occurs naturally in northern Queensland, as far as the Torres Strait Islands. Although it is found in tropical districts with very high summer rainfall, it is not a rainforest species but grows in exposed situations, either attached to tree trunks or on rocky outcrops.

Habitat alteration and indiscriminate collection by orchid enthusiasts have made this species rare or extinct in some places.

Cooktown orchid may be propagated from seed but technical skills and special apparatus not available to the novice are required. Established clumps with new shoots may be divided. As far south as Coff's Harbour, NSW, it is suitable for outdoor cultivation attached by wire or twine to the sunny eastern or northern side of a tree with persistent bark. Until the roots become fully established on the bark surface, they should be protected by a piece of hessian to avoid drying. A slab of cork provides a satisfactory alternative to cultivation on living bark. It may also be grown in pots or baskets, using fern fibre as a growing medium over a deep layer of broken crocks to provide effective drainage. South of Coff's Harbour, glasshouse cultivation is necessary using pots or cork slabs. Generous watering must be provided during summer when growth is active. Winter watering is required only to avoid shrivelling, otherwise the plant is liable to decay and leaf drop. Light applications of organic or artificial fertiliser during summer improve the number and size of flowers.

It is an ideal cut flower in autumn and winter, lasting up to two weeks in water, especially if pollination has not occurred. Flower spikes can last up to three months, giving the species considerable commercial potential as an indoor flowering plant suitable for warm well lit rooms.

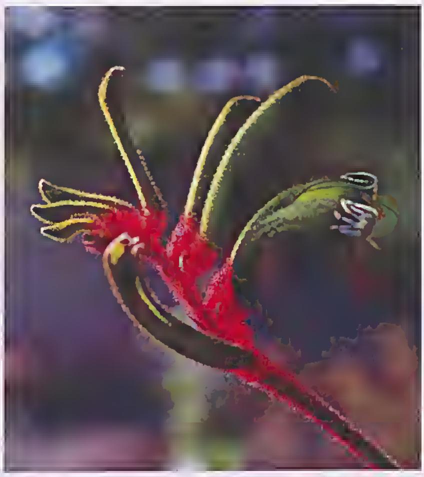
Variations in the size and colour of flowers and the size of pseudobulbs have been noted. Two varieties have been described but these represent the extremes of a continuously varying range of shapes and colours of the flowers. *D. bigibbum* var. *bigibbum* has smaller flowers with prominent white marks on the throat. The variety *superbum* has larger flowers. Plants with short thick pseudobulbs have been described as subvariety *compactum*. The more striking forms have been used extensively in hybridisation.

Cooktown orchid is considered Australia's showiest orchid species and has been successfully cultivated in heated glasshouses in England since the latter part of the nineteenth century. In recent years they have been exported from Australia to New Zealand, United States of America, Papua New Guinea and Fiji.

Cooktown orchid was depicted on the 25 cent stamp of the State floral emblem set issued on 10 July 1968. R. and P. Warner designed the stamp.

Western Australia

Anigozanthos manglesii, Mangles' kangaroo paw



R. Boden

M. Fagg

Mangles' kangaroo paw occurs in heath and sandy soils of south-western Western Australia.

Mangles' kangaroo paw, *Anigozanthos manglesii* D. Don was proclaimed the floral emblem of Western Australia on 9 November 1960.

It is one of about twelve species of the genus *Anigozanthos* which is restricted to the south-west of Western Australia. The family Haemodoraceae to which it belongs occurs in Australia, Malaysia, South Africa and the Americas.

The author of the genus was the French botanist, Jacques-Julien Houton de Labillardière, who was the first to collect kangaroo paw, *Anigozanthos rufa*, near Esperance in 1792. The generic name is probably derived from the Greek *anisos*, meaning unequal or oblique, and *anthos*, meaning flower, in reference to the division of the floral extremities into six unequal parts. The specific name, *manglesii*, honours Robert Mangles who raised the type specimen from seed in his English garden. The common name, kangaroo paw, is derived from the appearance of the unopened cluster of flowers.

Mangles' kangaroo paw was introduced to England in 1833 and described in 1836 by the British botanist, David Don (1799–1841). Robert Mangles recorded his experiences in growing the species in letters to his brother, Captain James Mangles RN, an enthusiastic patron of the cultivation of Western Australian species in English horticulture. In 1839 he wrote 'I have Anigozanthus [*sic*] Manglesii shewing for flower in the open ground where I put it in April'. In August he noted that 'Anigozanthus [*sic*] is progressing fast', and three weeks later 'Anigozanthus [*sic*] is now four feet high but has not yet expanded its flower. I am under some apprehension these frosty nights may destroy it'.

In appearance, Mangles' kangaroo paw is a low sub-shrub growing from an underground stem. Its broad leaves are about 30 to 60 cm long and taper to an acute apex. The flowering stem grows to about a metre in height and is often forked in specimens from the northern part of the species' range. The stem and the bases of the flowers are usually deep red and covered with woolly hairs. The colour changes abruptly to a brilliant green for the greater length of the flower which splits open revealing the smooth pale green interior. Other colour forms include orange, green with an orange base, bright yellow with a red base, metallic blue with a red base and an all white form. The flowers are pollinated by birds seeking nectar.

In its natural habitat Mangles' kangaroo paw flowers between August and October, depending on seasonal conditions and locality. It occurs naturally in heath on sandy soil from the Murchison River in the north to Busselton and Mount Barker in the south and Lake Muir to the east. In the Darling Range it occurs in heath on gravelly soils of lateritic origin.

The species is classed as protected flora. Collectors of any whole plants and flowers must be licensed.

Mangles' kangaroo paw seeds germinate fairly readily, especially when sown in sandy soil, and propagation by root division is also possible. It is best treated as a biennial as cultivated plants tend to deteriorate after the second season. The foliage is attractive to snails and damage is avoided by the use of snail bait. Supplementary watering of cultivated plants should be avoided during summer when they are dormant.

The species is susceptible to ink spot disease which begins as isolated black spots on older leaves which may eventually die. In extreme cases the whole plant may die. As four different fungi seem to be responsible, no single fungicide gives effective control. Cultivation in an open sunny position and avoidance of overhead watering may reduce the severity of the disease.

Manipulated hybrids of Mangles' kangaroo paw and the less spectacular *A. flavidus* have been produced. The most horticulturally desirable one shows superior foliage quality and increased resistance to snail damage and fungal disease, while retaining the spectacular flower colours of Mangles' kangaroo paw. Tissue culture enables the production of large numbers of particular colour forms.

Fresh flowers of Mangles' kangaroo paw last well in water and its brilliant colours and unusual form are exploited to great effect in simple line arrangements. It retains its colours well as a dried flower and is often sold in bunches of mixed Western Australian wildflowers. Considerable impact is made on wild populations of this species by the collection of flowers to provide both fresh and dried material for local use and export.

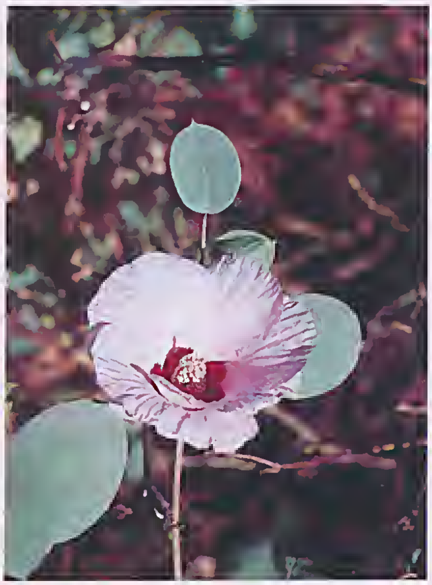
Mangles' kangaroo paw, superimposed on a distant view of Perth, was depicted on a 5 pence stamp issued on 1 November 1962 to commemorate the Seventh British Empire and Commonwealth Games held in the Western Australian capital. R. M. Warner designed the stamp. The 6 cent stamp of the set of State floral emblem designs issued on 10 July 1968 also featured Mangles' kangaroo paw with the caption Kangaroo Paw. It was designed by Nell Wilson.

The State floral emblem is incorporated in the armorial bearings of Western Australia, granted by Royal Warrant on 17 March 1969, and in this form appears on stationery of all government departments and many government publications. The blazon of the arms includes: 'And for Crest: On a Wreath Or and Sable The Royal Crown between two Kangaroo Paw (Anigosanthos [*sic*] Manglesii) flowers slipped proper'.

In a less formal style it forms part of the badge used on uniforms and vehicles of the Department of Fisheries and Wildlife and so is linked with the implementation of conservation management. The flowers are used on a wide range of commercial products and in the insignia of community groups.

Northern Territory

Gossypium sturtianum, Sturt's desert rose



M. Fagg

P. Latz

Sturt's desert rose occurs on stony or rocky slopes or in dry creek beds throughout much of arid Australia.

On 12 July 1961, Sturt's desert rose was proclaimed floral emblem of the Northern Territory by the Commonwealth Government which was then responsible for the administration of the Territory. Proclamation was made using the name *Cienfugosia gossypioides* which is now replaced by the name *Gossypium sturtianum* J.H. Willis var. *sturtianum*. In an Executive Statement in June 1975, the Majority Leader in the Legislative Assembly of the Northern Territory confirmed this species as the floral emblem. Since the granting of self-government to the Northern Territory in 1978, Sturt's desert rose has been incorporated into various insignia and so become symbolic of the region.

Sturt's desert rose is also known as Darling River rose, cotton rosebush and Australian cotton. Although less widely used, the vernacular name, Australian cotton, is appropriate as this species belongs to the genus *Gossypium*, which includes commercial cotton. However the hairs covering the seeds are much shorter than the lint of commercial cotton varieties.

The generic name *Gossypium*, is derived from the Latin *gossypion*, used by Pliny for the cotton tree, *Gossypium arboreum*. The specific and varietal names, *sturtianum*, honour Captain Charles Sturt (1795–1869). The species was first collected by Sturt 'in the beds of the creeks on the Barrier Range' during his journey to central Australia in 1844–45. The specimens were 'placed at (the) disposal' of the Scottish botanist, Robert Brown (1773–1858), who described the plant in 1849 and named it *Sturtia Gossypioides*. In Brown's opinion 'Sturtia is no doubt very nearly related to Gossypium'. The species has undergone several changes in name, and in 1947 J. H. Willis of the National Herbarium of Victoria proposed the name by which it is currently known, *Gossypium* *sturtianum* J. H. Willis var. *sturtianum*. The precise number of species of the genus *Gossypium* is uncertain, being the subject of controversy among taxonomists—current opinions range from 20 to 67. The genus is distributed in tropical and sub-tropical areas of Africa, Asia, Australia and the Americas. *Gossypium* belongs to the hibiscus family, Malvaceae, which is widespread in tropical and temperate regions of the world.

In its natural habitat, Sturt's desert rose forms a relatively compact shrub about a metre in height but may reach 2 metres under cultivation. The leaves are dark green usually with black stipples, entire, round to oval in shape and about 5 cm long. The mauve petals are about 5 cm long with red bases forming a contrasting centre in each flower. Flowering is not strictly seasonal but reaches a peak in late winter. The fruit, a capsule, is about 1 cm long and contains many small seeds covered with short silky hairs.

Sturt's desert rose occurs naturally on stony or rocky slopes, or in dry creek beds in the southern part of the Northern Territory, north-eastern South Australia, western Queensland, western New South Wales and in parts of northern Western Australia.

This drought-tolerant shrub can be cultivated successfully in areas of low to moderate rainfall. Propagation is possible from seeds and cuttings. An advantage with the latter method is that it provides an opportunity to establish superior forms of the shrub in cultivation. Sturt's desert rose tolerates light frosts and under cultivation it responds well to supplementary watering and moderate pruning. Pleasing results are obtained when it is grown as a specimen plant in lawn. Like most members of the hibiscus family, the flowers close soon after picking, limiting its suitability as a cut flower.

Manipulated hybrids between Sturt's desert rose and other Australian species of *Gossypium* bear larger mauve flowers more profusely than either parent. The hybrid between Sturt's desert rose and the American species, *Gossypium barbadense* bears large showy red flowers. Thus the considerable horticultural merit of Sturt's desert rose may be enhanced by careful selection of desirable natural forms, as well as hybridisation with other species which occur in tropical Australia, Africa and the Americas.

The blazon of the armorial ensign assigned to the Northern Territory on 11 September 1978 and recorded in the College of Arms, London, states, 'Growing from a compartment comprising a grassy-sandy mound Sturt's Desert Roses (Gossypium sturtianum) . . . to be borne for the said Northern Territory upon Shields Seals Banners Flags or otherwise according to the Laws of Arms'.

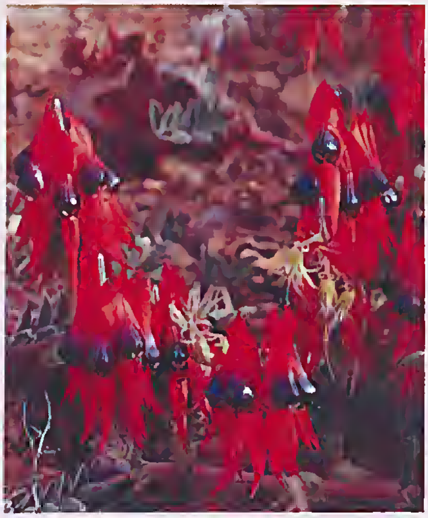
As the Northern Territory approached self-government, the appropriateness of a territorial flag was realised. The Northern Territory Government invited members of the public to submit proposals for the design of a flag. Some of these suggestions provided a basis for the design by the Australian artist, Robert Ingpen. It depicts, in the official colours, black, white and ochre, Sturt's desert rose in stylised form, together with the Southern Cross constellation. Mounted on an ochre panel, the seven white petals and the seven-pointed black star forming the flower's centre, represent the six Australian States and the Northern Territory. This flag was raised for the first time on 1 July 1978, in a ceremony marking the granting of self-government.

Both the armorial bearings and the stylised form of Sturt's desert rose are used widely on official stationery, advertising and publications. The stylised form of the floral emblem is easily identified and readily associated with the Northern Territory, despite the assigning, for symbolic reasons, of an additional two petals to the normally five-petalled flower.

Stamps featuring Sturt's desert rose as the floral emblem of the Northern Territory were of three values, 2 cents, 4 cents and 6 cents, issued on 1 October 1971, 27 April 1970 and 28 September 1970 respectively. They supplemented the set of six stamps issued in 1968 depicting the floral emblem of each of the six Australian States. The granting of self-government was commemorated by the issuing on 19 June 1978 of an 18 cent stamp designed by Douglas Pitt, depicting Sturt's desert rose beneath a map of Australia with the Northern Territory delineated.

South Australia

Clianthus formosus, Sturt's desert pea



M. Fagg

M. Fagg

Sturt's desert pea occurs in woodlands and on open plains over much of arid Australia.

Sturt's desert pea, *Clianthus formosus* (G. Don) Ford and Vickery, was adopted as the floral emblem of South Australia on 23 November 1961.

This species, a member of the pea family, Fabaceae, is confined to Australia, where it occurs in all mainland States except Victoria. The original collection was made in 1699 by William Dampier on Rosemary Island in the Dampier Archipelago where he collected a specimen from 'a creeping vine that runs along the ground ... and the blossom like a bean blossom, but much larger and of a deep red colour looking very beautiful'. This specimen is now housed in the Sherardian Herbarium, Oxford.

The only other species of the genus, *Clianthus puniceus*, red parrot beak, is confined to New Zealand, where it is threatened by introduced mammals, including brushtail possums from Australia. Captain Charles Sturt (1795–1869) noted the occurrence of *Clianthus formosus* in 1844 while exploring between Adelaide and central Australia, and the common name, Sturt's desert pea, commemorates a notable explorer of inland Australia, as well as indicating the plant's habitat and family.

Sturt's journal, *Narrative of an Expedition into Central Australia*, refers several times to the beauty of the desert pea in flower and the harsh nature of its habitat, and notes that beyond the Darling River:

> we saw that beautiful flower the Clianthus formosa [*sic*] in splendid blossom on the plains. It was growing amid barrenness and decay, but its long runners were covered with flowers that gave a crimson tint to the ground.

Clianthus is derived from the Greek *cleos*, meaning glory, and *anthos*, flower, referring to the splendid appearance of the flowers. The specific name *formosus* is Latin for beautiful. The original author of the species was the Scottish botanist, George Don (1798–1856).

In its natural habitat Sturt's desert pea is a perennial plant with silky grey-green pinnate foliage arising from prostrate stems. The leaves and stems are covered with downy hairs. The flowers are about 9 cm long and arranged in clusters of six to eight on short, thick, erect stalks. The petals are usually blood red or scarlet with a glossy black swelling or boss at the base of the uppermost petal, the standard. Other colour forms range from white to deep pink, either with or without a black boss, and rarely a bicoloured form, in which the standard is scarlet and the other petals, the wings and keel, are white tipped and edged with scarlet. The fruit is a legume about 5 cm long which splits at maturity releasing several flat kidney-shaped seeds.

Sturt's desert pea occurs in woodlands and on open plains, often as an ephemeral following heavy rain. It is able to withstand the marked extremes of temperature experienced in inland deserts, and light frosts are tolerated by established plants.

Sturt's desert pea is protected in South Australia. The flowers and plants must not be collected on private land without the written consent of the owner. Collection on Crown land is illegal without a permit.

The hard seed coat of Sturt's desert pea inhibits germination. This effect can be overcome by filing or nicking the seed coat away from the 'eye' of the seed; alternatively, the seed may be rubbed gently between sheets of sandpaper. Soaking the seed in warm water gives variable results. Boiling water should not be used as it destroys beneficial bacteria on the seed coat. Since the seedlings develop a long tap root and do not tolerate root disturbance, treated seeds should be planted directly into the chosen garden site or container, or alternatively into small pots for transplanting soon after germination.

Full sun, perfect drainage and protection from snails are essential. Supplementary watering may not be necessary once the seedlings are established. Under ideal conditions flowering commences about four months after germination. Sturt's desert pea is usually treated as an annual but vigorous flowering may result if root crowns survive from one season to the next. Alternatively, it may be grown in large drums, tubs and upright terracotta drainpipes which allow adequate root development.

Clianthus formosus was introduced to England in 1855. It proved difficult to grow on its own roots, but grafted on to *Colutea arborescens,* bladder senna, it produced an admirable plant for hanging baskets.

Tissue culture is also used to propagate Sturt's desert pea. Small pieces of stem tissue are grown on a nutrient medium under sterile laboratory conditions. This method produces large numbers of identical plants from a small amount of parent tissue and is a means of maintaining unusual colour forms.

Sturt's desert pea was depicted on the 20 cent stamp designed by Dorothy Thornhill as part of a set of six stamps issued on 10 July 1968, featuring floral emblems of the Australian States. The South Australian emblem was repeated on the 7 cent and 10 cent stamps, two of a set of six stamps issued on 1 October 1971 and 15 January 1975 respectively.

The distinctive shape of Sturt's desert pea makes it ideal for use on insignia, and on decorative items where it is readily identified either in realistic or stylised form. The armorial bearings of South Australia include two crossed branches of wattle at the base of the shield. These bearings, which were granted in 1936, Centenary Year, do not include the floral or faunal emblems of the State.

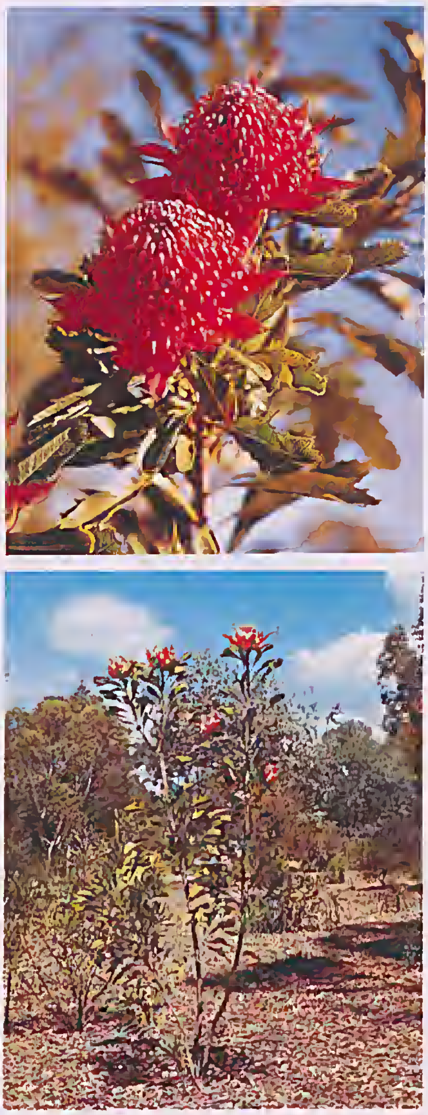
New South Wales

Telopea speciosissima, waratah

Waratah, *Telopea speciosissima* R.Br., was proclaimed the official floral emblem of New South Wales on 24 October 1962. Robert Brown (1773–1858) named the genus *Telopea* in 1810 from specimens collected in the Blue Mountains, west of Sydney. Sir James Smith (1759–1828), a noted botanist and founder of the Linnaean Society in England, wrote in 1793: 'The most magnificent plant which the prolific soil of New Holland affords is, by common consent, both of Europeans and Natives, the Waratah. It is moreover a favourite with the latter, upon account of a rich honeyed juice which they sip from its flowers'.

The generic name *Telopea* is derived from the Greek *telopos*, meaning seen from afar, and refers to the great distance from which the crimson flowers are discernible. The specific name *speciosissima* is the superlative of the Latin adjective *speciosus*, meaning beautiful or handsome. Waratah, the Aboriginal name for the species, was adopted by early settlers at Port Jackson.

Telopea is an eastern Australian genus of three species. One is confined to New South Wales, one to Tasmania and one extends from eastern Victoria into New South Wales. *Telopea* belongs to the spider flower family, Proteaceae, which is predominantly Australian and southern African in distribution and includes genera such as *Grevillea*, *Banksia*, *Macadamia* and *Hakea*. *Protea cynaroides*, king protea, is the official floral emblem of the Republic of South Africa.



Australian Information Service

Australian National Botanic Gardens

Waratah grows mainly in the shrub understorey of open forest on sandy soil in eastern New South Wales, and is popular in cultivation.

Waratah is a stout, erect shrub which may grow to 4 metres. The dark green leathery leaves, 13–25 cm in length, are arranged alternately and tend to be coarsely toothed. The flowers are grouped in rounded heads 7 to 10 cm in diameter surrounded by crimson bracts, about 5 to 7 cm long. It flowers from September to November and nectar-seeking birds act as pollinators. Large winged seeds are released when the brown leathery pods split along one side.

The species is fairly widespread on the central coast and adjoining mountains of New South Wales, occurring from the Gibraltar Range, north of Sydney, to Conjola in the south. It grows mainly in the shrub understorey in open forest developed on sandstone and adjoining volcanic formations, from sea level to above 1000 metres in the Blue Mountains. Soils within its range tend to be sandy and low in plant nutrients. Rainfall is moderately high. Waratah plants resist destruction by bushfires, a natural element of their habitat, by regenerating from the rootstock. Flowering recommences two years after a moderate fire.

Waratah is a spectacular garden subject in suitable soil and climate; it flowers prolifically and tends to be long-lived. Failures can usually be attributed to the effects of unsuitable soil conditions, aspect or climate. Seeds should be sown in a coarse sandy medium and soon after germination the seedlings should be transplanted into individual pots of similar soil. Fresh seeds germinate readily but the seedlings are prone to the fungal disease, damping off, which may be reduced by exposing the seedlings to full light, except for the shading necessary after transplanting. Propagation by cuttings is also possible. In the garden, plants should be grown in lightly shaded to sunny positions in deep, well drained soil. They need to be well watered until fully established but waterlogging must be avoided.

Waratah responds well to pruning which encourages flowering the following year, and overcomes the natural tendency of the shrub to assume a straggly shape. Some pruning is achieved by cutting flowers for decoration. It is a spectacular cut flower and lasts well in water.

Flowers are usually crimson, but a rare creamy white form has been cultivated successfully as a horticultural curiosity. Manipulated hybrids of *T. speciosissima* have been produced combining the grandeur of its flowers with the greater frost tolerance of other *Telopea* species. Hybrids between *T. speciosissima* and the Braidwood waratah, a form of *T. oreades,* have less showy flowers but a compact shape and attractive foliage. The registered cultivar, *Telopea* 'Braidwood Brilliant', a small upright multi-stemmed shrub, is a hybrid between *T. speciosissima* and *T. oreades.* The Gippsland form of *T. oreades* has also been hybridised with *T. speciosissima*, producing a hardy free flowering shrub.

Waratah occurs naturally in at least ten national parks in the geological formation, the Sydney Basin. Brisbane Water, Dharug and Macquarie Pass National Parks are among the areas where this species is conserved. Waratah flowers can be gathered in New South Wales for sale only if the collector is licensed.

Waratah is cultivated north of Sydney and in the Dandenong Ranges, Victoria. It is grown in Israel, New Zealand and Hawaii for the cut flower trade. It was introduced to England in 1789 but cannot survive English winters out of doors, and it rarely flowers in glasshouses. It is also cultivated in California.

When the Australian flora began to influence artists and craftsmen of European origin, waratah was adopted as a motif. The Museum of Applied Arts and Sciences in Sydney has a significant collection of arts and crafts featuring designs based on the waratah. The diversity of media used in the collection include suede, stained glass, bone china and earthenware, glassware, copper, bronze, and wood. In 1915, R. T. Baker, a passionate advocate of the waratah (and other local flora) as a motif in art, craft and industry, wrote: 'The entire plant (waratah) lends itself to such a boldness of artistic ideas in all branches of Applied Art that it has few compeers amongst the representatives of the whole floral world...'

Many government authorities and community groups in New South Wales use waratah in their insignia, often adopting a stylised version of the flower-head.

It was depicted on the 3 shilling stamp, one of a set issued in 1959 illustrating Australian flora. Margaret Stones, an Australian botanical artist attached to the staff of Kew Gardens, London, designed the stamp. Waratah was used again on the 30 cent stamp as part of a State floral emblem set issued on 10 July 1968.

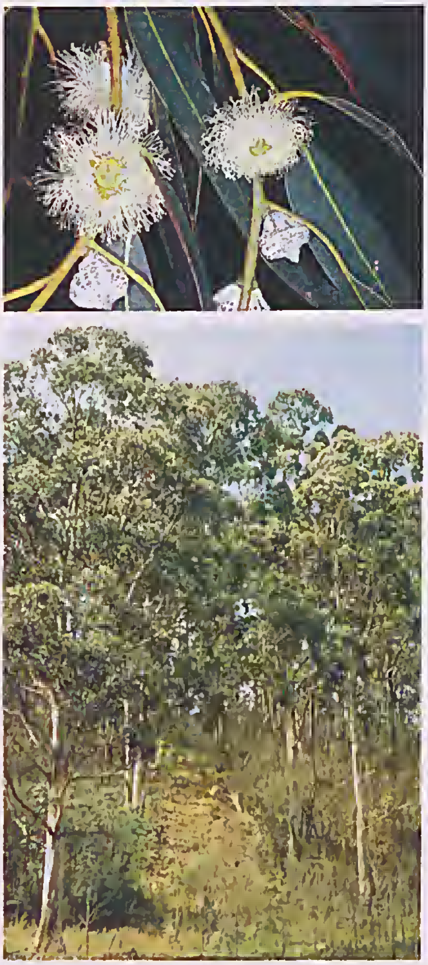
Tasmania

Eucalyptus globulus, Tasmanian blue gum

The Tasmanian blue gum, *Eucalyptus globulus* Labill., was proclaimed as the floral emblem of Tasmania on 27 November 1962.

Eucalyptus globulus was first collected on the south-east coast of Tasmania in 1792–93 by Jacques-Julien Houton de Labillardière (1755–1834) and described by him in 1799. He was a distinguished French botanist who accompanied Bruny D'Entrecasteaux on the expedition in *La Recherche* and *L'Espérance* in 1791–94 in search of their missing compatriot, La Pérouse. The two ships of the expedition led by La Pérouse landed at Botany Bay on 26 January 1788. They departed six weeks later and forty years elapsed before their fate was established by the discovery of wreckage at Santa Cruz, north of the New Hebrides. Labillardière was a keen collector of plants and animals and also recorded detailed accounts of the appearance and customs of the Australian Aborigines he observed. His plant specimens are now housed in the Museum of Florence.

E. globulus now includes four subspecies of which *E. globulus* subsp. *globulus* is the Tasmanian emblem. The generic name *Eucalyptus* is derived from the Greek *eu*, well, and *kalypto*, to cover, as with a lid, referring to the operculum, a cap-like structure which protects the stamens in the bud and is shed when the flower opens. The operculum is a distinguishing feature of all species of *Eucalyptus*. The specific name *globulus*, from the Latin meaning ball-like or spherical, refers to the shape of the fruit. The genus *Eucalyptus* numbers about 600 species which are widely distributed in Australia, with a few species occurring in some of the islands to the north. It belongs to the family Myrtaceae, which is widespread in Australia and tropical regions of the Americas.



Australian National Botanic Gardens

CSIRO Division of Forest Research

Tasmanian blue gum occurs mainly in tall open forest in eastern Tasmania.

Tasmanian blue gum is a tall, straight tree growing to 70 metres in height and 2 metres in trunk diameter under favourable conditions. The rough, deeply furrowed, grey bark is persistent at the base of the trunk but above this level it is shed in strips leaving the branches and the greater length of the trunk smooth-barked. The broad juvenile leaves, borne in opposite pairs on square stems, are about 6 to 15 cm long and covered with a blue-grey, waxy bloom. This is the origin of the common name, blue gum. The mature leaves are narrow, sickle-shaped and dark shining green. They are arranged alternately on rounded stems and range from 15 to 35 cm in length. The buds are top-shaped, ribbed and warty and have a flattened operculum bearing a central knob. The cream flowers are borne singly in the leaf axils and produce copious nectar which tends to yield a strongly flavoured honey. The woody fruits range from 1.5 to 2.5 cm in diameter. Numerous small seeds are shed through valves which open on the top of the fruit.

Eucalyptus globulus subsp. *globulus* occurs in tall open forest in south-eastern Tasmania and to a lesser extent along the eastern coast of the State. It also occurs on King and Flinders Islands in Bass Strait. Outside Tasmania it is confined to Wilson's Promontory and the Cape Otway district in southern Victoria. The climate throughout its range is cool to mild, with wet winters and reliable summer rainfall. Within parts of its range, light frosts and snowfalls occur.

Tasmanian blue gum is protected in conservation areas such as Maria Island National Park, Freycinet National Park, Tasman Arch Nature Reserve and St Mary's Pass Nature Reserve. Outside State reserves it occurs in reserves managed by the Department of Lands and the Forestry Commission. Both authorities have regulations prohibiting the taking of native flora from Crown Land and State forests respectively without prior permission of the managing authority.

Being a very tall evergreen tree Tasmanian blue gum is unsuitable for cultivation in the average home garden but it can be recommended as a handsome subject for parks and large gardens in regions which do not experience severe frosts. It is easily propagated from seeds. In subtropical horticulture it has enjoyed popularity as a bedding plant, with freshly raised seedlings being planted each year. Its horticultural value lies in the unusual effect achieved by the colour and form of the juvenile foliage. It is grown successfully in large gardens in Cornwall, where the cool to mild, damp climate is favourable.

The flowers are usually inaccessible and so they are seldom available for indoor decoration. The large blue-grey juvenile leaves are ideal as backing material in floral arrangements in which an unusual colour effect and bold form are desired. Either fresh or dried foliage may be used. Both emit the distinctive *Eucalyptus* fragrance so evocative of the Australian bush.

Tasmanian blue gum yields pale, hard and durable timber which is used in Australia for poles, piles and sleepers. The species has been widely planted in New Zealand, South Africa, South America, California, India and Mediterranean countries, in farm windbreak, forestry and ornamental plantations. Among the qualities admired overseas are its rapidity of growth, straightness of trunk, strength of wood and adaptability to a range of sites. Originally overseas plantations supplied antiseptic oil, fuel, telegraph poles, mine props and construction timber. In addition they now provide pulpwood for paper and rayon manufacture. It has also contributed to the drainage of swamps in malarial localities in central Africa, Italy and Turkey. Before the role of the malarial mosquito in spreading the disease was understood, there was a superstitious belief that the leaves of the blue gum released a magical essence which purified the air of fever germs. In reality the benefit is derived from the loss of suitable breeding sites for mosquitoes, brought about by the capacity of the trees to evaporate water from the swampy ground.

Tasmanian blue gum is so abundant in coastal areas of California that many people assume it is a native species. In recent years concern has been expressed that it appears to be becoming naturalised. Studies show that there is a tendency for it to spread from plantations by seed dispersal along drainage lines but it is doubtful that it will ever become troublesome.

It was featured on a 15 cent stamp issued on 10 July 1968 as part of a set of six stamps depicting State floral emblems. The stamp was designed by Dorothy Thornhill.

Although Tasmanian blue gum is the official floral emblem it seems to be seldom used for either official or popular puposes. This neglect may be due in part to the fact that, while it is a handsome tree of considerable economic importance, it is not as familiar to many Tasmanians as other indigenous species. The armorial bearings of Tasmania include hops and apples, crops of considerable value to the State. The soubriquet, Apple Isle, is frequently used in tourist promotion and the apple is featured on a wide range of souvenirs.

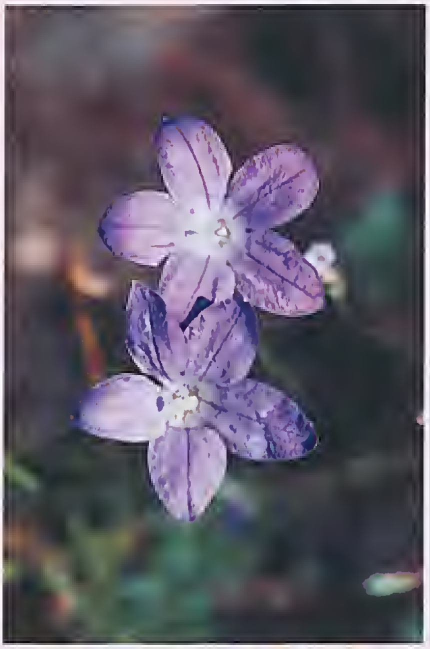
Australian Capital Territory

Wahlenbergia gloriosa, royal bluebell

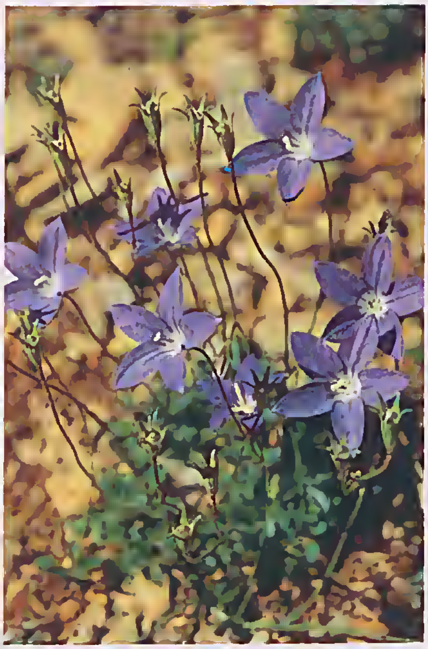
The royal bluebell, *Wahlenbergia gloriosa* Lothian, was announced as the floral emblem of the Australian Captial Territory on 26 May 1982 by the Hon. Michael Hodgman, the Minister for the Capital Territory. This species was the unanimous recommendation of a committee chaired by Dr Robert Boden, Director of the National Botanic Gardens. Mr Max Gray and Professor Lindsay Pryor were invited to join the committee to provide botanical advice on local species to be evaluated as potential floral emblems, and Mrs Loma Rudduck and Mr Derek Wrigley assessed the merits of each species for design purposes. Native occurrence in the Australian Capital Territory was the main criterion accepted by the committee but other desirable features sought in a ranked list of recommendations included horticultural merit and design potential, both in naturalistic and stylised representations.

The genus *Wahlenbergia* was proposed by Heinrich Schrader, a German botanist, in honour of Georg Göran Wahlenberg (1780–1851), Professor of Botany at Uppsala, Sweden, and described by Albrecht Roth in 1821. The specific epithet *gloriosa* is Latin for superb or glorious, a reference to superb qualities of a plant worthy of cultivation.

Wahlenbergia occurs chiefly in South America, New Zealand and Australia. It belongs to the bluebell family, Campanulaceae, which is distributed mainly in temperate areas of the Northern



Australian National Botanic Gardens



C. Totterdell

Royal bluebell occurs mainly in sub-alpine woodland of south-eastern Australia.

Hemisphere. The use of the common name bluebell for *Wahlenbergia* species is somewhat confusing as many distantly related genera also share this descriptive common name.

W. gloriosa is a small perennial herb with oblong leaves about 2.5 cm long; the leaf margins are conspicuously waved. The violet blue flowers are up to 2 or 3 cm in diameter and often appear to have a paler centre due to the light blue base of the petals combined with the purple style which ends in two white stigmas. The flowers may be erect or nodding and are carried on long slender stems.

Royal bluebell occurs mainly in subalpine woodland in the Australian Capital Territory, south-eastern New South Wales and Victoria. It is legally protected throughout its occurrence in the wild.

W. gloriosa is a charming plant in cultivation. Propagation is possible from seeds, cuttings or root divisions. It is suitable for growing in sunny or semi-shaded positions in cool regions, as a ground cover, and in shallow pots or hanging baskets. Well drained soils are necessary and these may be enriched by applications of humus. Established plants respond to applications of soluble fertiliser. Flowering extends from October to March. The flowers are short-lived when cut but potted specimens in flower are suitable for indoor decoration in brightly lit positions.

The announcement of *W. gloriosa* as floral emblem brought the Australian Capital Territory to a position equal to that of the Australian States and the Northern Territory. Previously, in the absence of official territorial emblems, the armorial bearings granted to the city of Canberra tended to be used, either partly or wholly, by community groups and sporting representatives. Naturally Canberra's armorial bearings are related to its status as the seat of the Australian Parliament but two of the heraldic devices are also botanical in nature. The Rose of York, included at the base of the arms, commemorates the role of the Duke of York in the establishment of the seat of government at Canberra. The *Eucalyptus* tree, pictured on the mound behind the portcullis, is typically Australian and represents the growth and progress of Canberra and its development as a garden city.

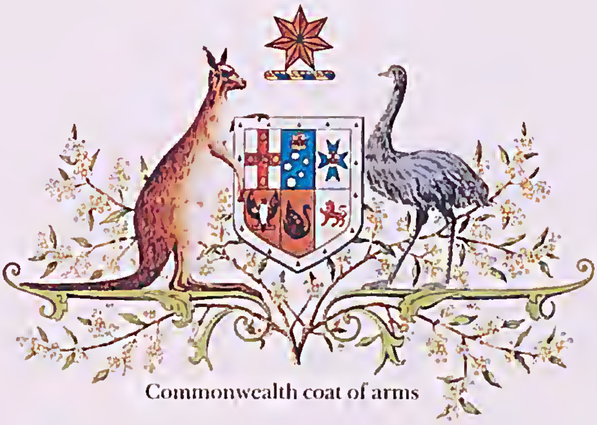
Although *W. gloriosa* has not yet been incorporated in designs for stamps or insignia used by government departments or authorities, it has been enthusiastically adopted by community groups and craftsmen seeking a symbol of the Australian Capital Territory.

Both stylised and realistic designs have been used in screen-printed woven goods and stationery produced for local consumers and the tourist trade. The Royal Australian Mint produced a medallion in 1983, bearing the royal bluebell on the obverse side and a symbolic representation of the Mint on the reverse.

Uses of Floral Emblems

The unusual colours and forms of many Australian wildflowers have appealed to artists and illustrators since the early years of European exploration and settlement. Expressions of regional identity are made in depicting these beautiful flowers as symbols and decorations in artwork. Designs incorporating native plants have been used on coins, stamps, badges, medals and as decoration on household items such as china, furniture, plaster mouldings and ceramic tiles. Advertisements and trademarks for locally manufactured goods have also featured native wildflowers. The floral emblems of Australia, its States and Territories, are incorporated in some armorial bearings and official insignia and in the badges of sporting clubs and other community groups. Some uses of floral emblems are illustrated in the following pages.

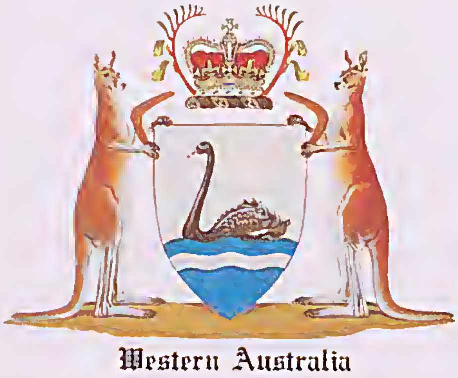
Official



Commonwealth coat of arms

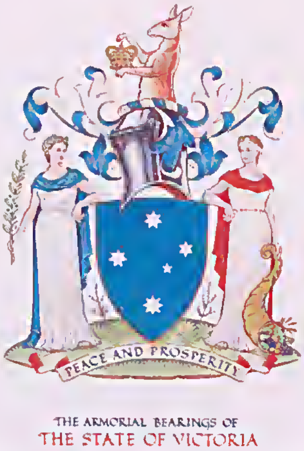
Honours Secretariat, Government House, Canberra

Order of Australia Knight/Dame awards.



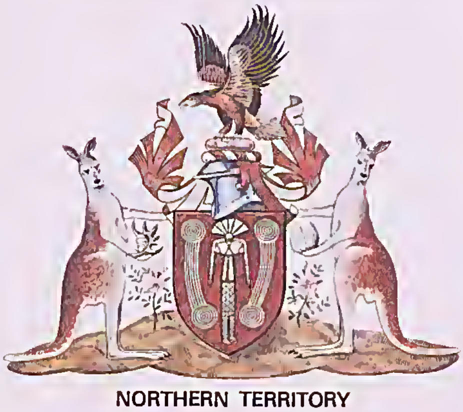
Western Australian coat of arms illustrating Mangles' kangaroo paw.

Western Australian Government



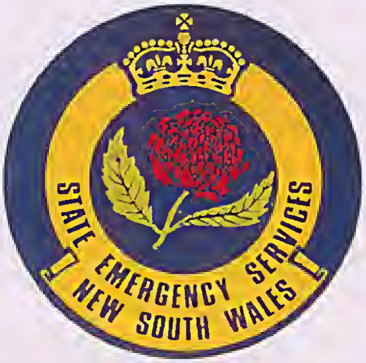
Victorian coat of arms illustrating common heath.

Victorian Government



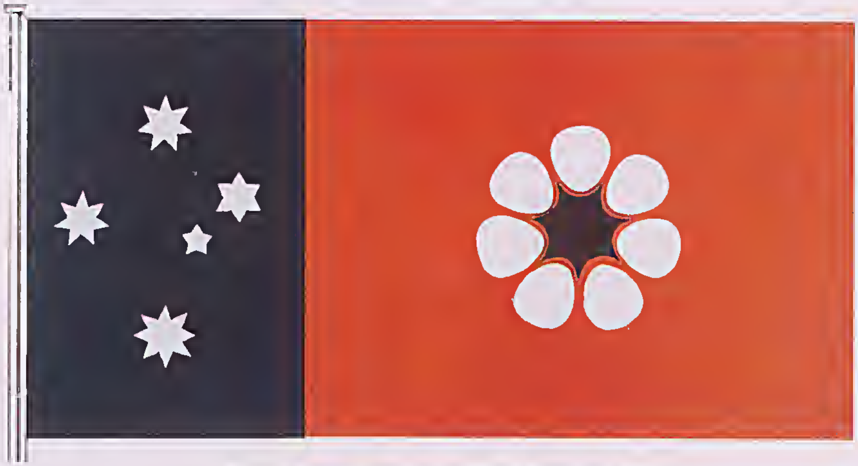
Northern Territory coat of arms illustrating Sturt's desert rose.

Northern Territory Government



Symbolic use of waratah for the NSW State Emergency Service.

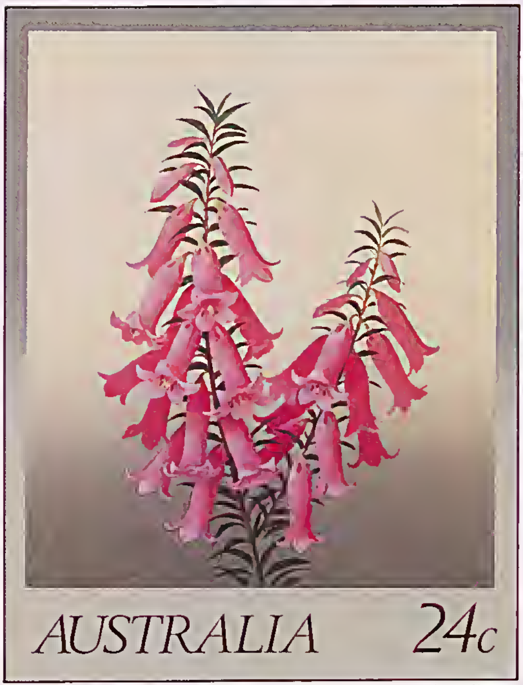
NSW State Emergency Service



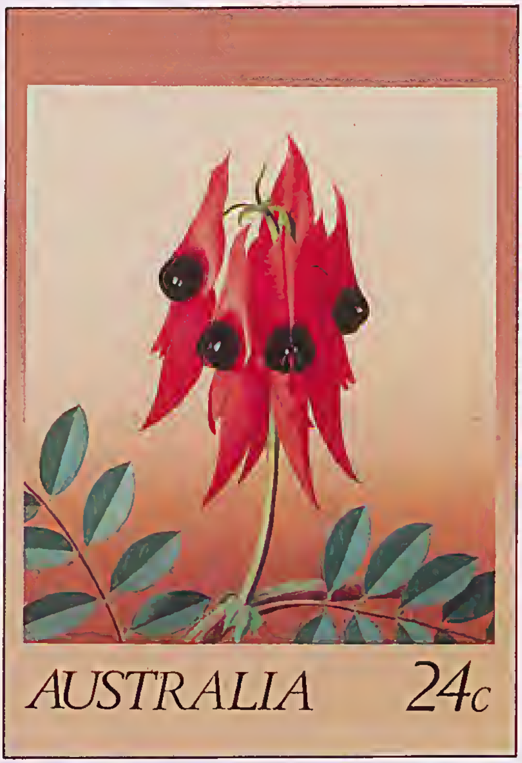
Sturt's desert rose in stylised form on the Northern Territory flag.

Northern Territory Government

Stamps



Australia Post



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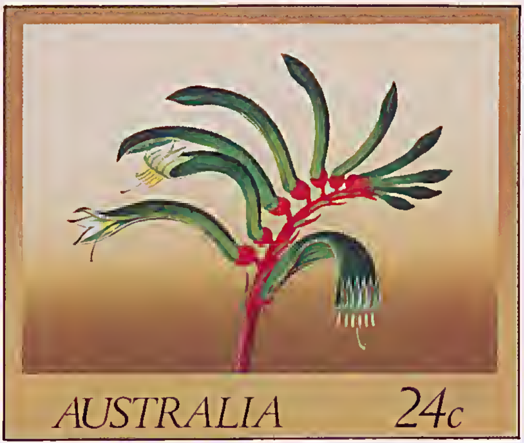

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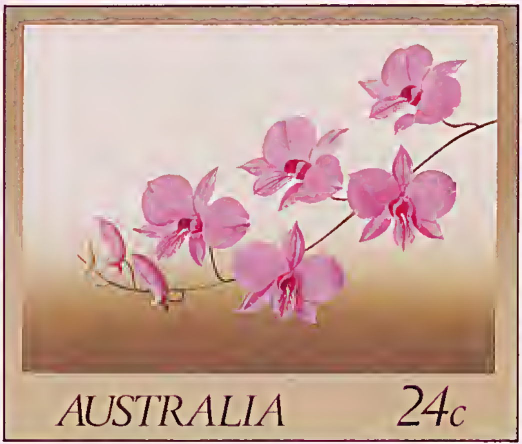

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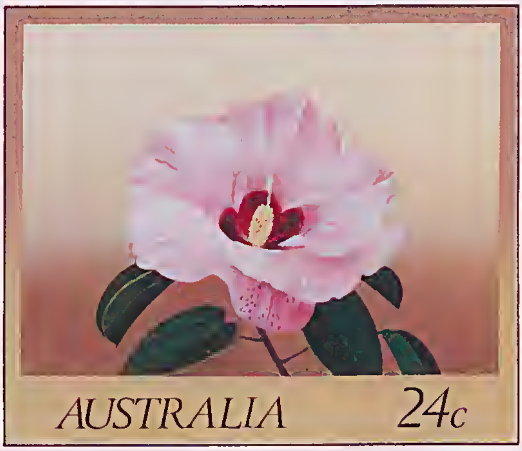

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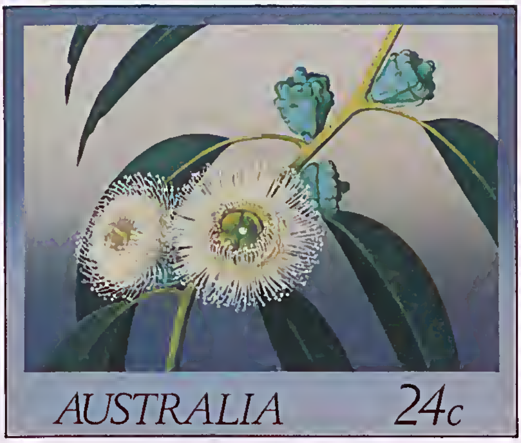

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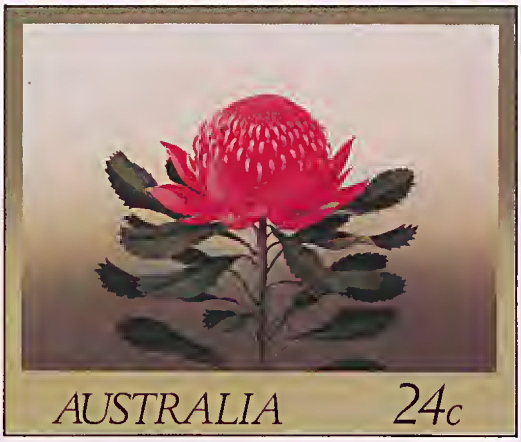

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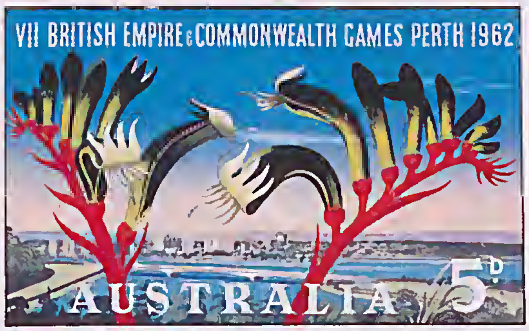
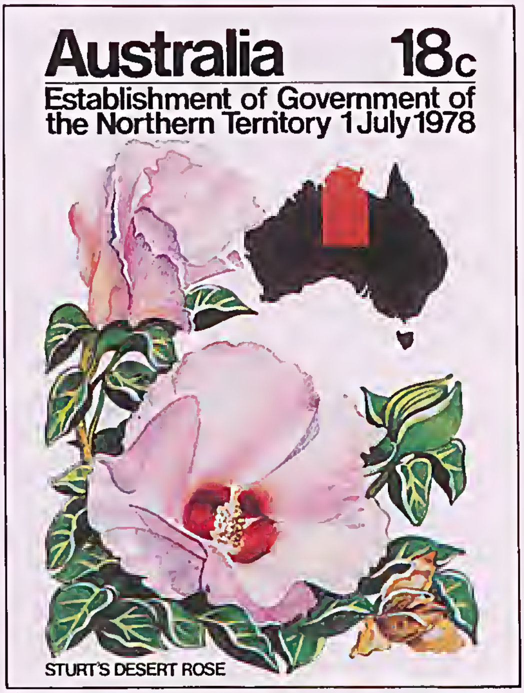

VII BRITISH EMPIRE & COMMONWEALTH GAMES PERTH 1962
AUSTRALIA
5D

Australia Post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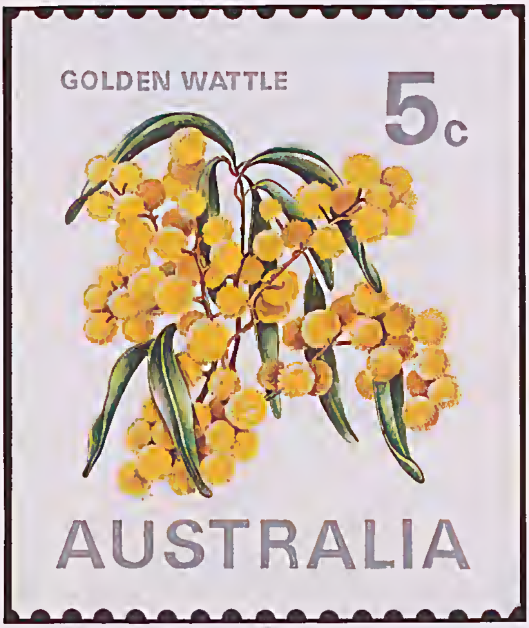
Establishment of Government of the Northern Territory 1 July 1978
STURT'S DESERT ROSE

Australia Post



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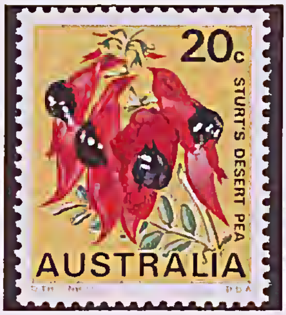
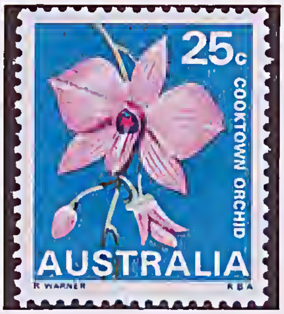
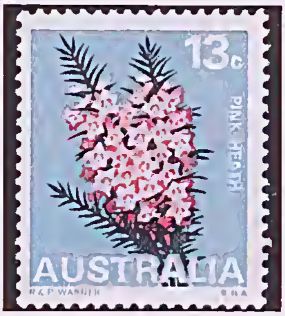
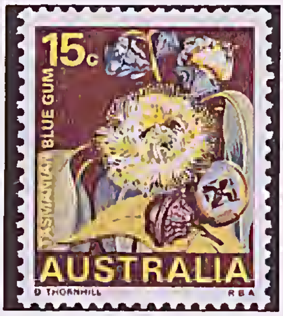
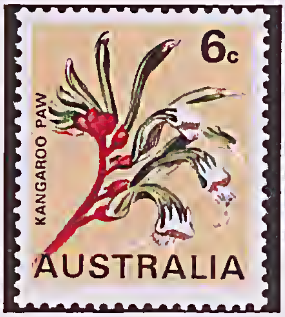
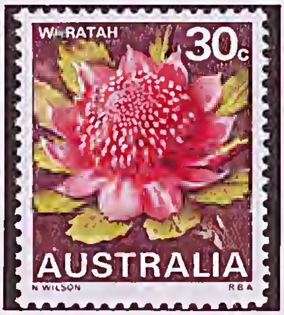


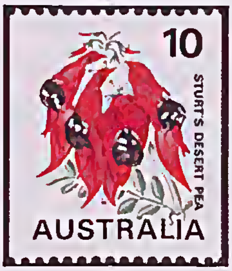


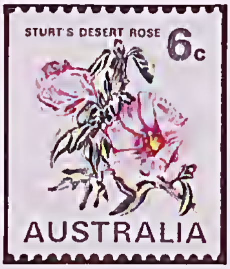










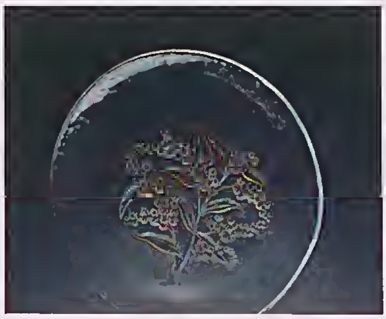


Australia Post

Decorative

Bond International

Australian National Botanic Gardens


Australian National Botanic Gardens

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